MODIS Technical Team Meeting
November 29, 2001
Building 33, Room E125
3:00 P.M.

Vince Salomonson chaired the meeting. Present were Skip Reber, Barbara Conboy, Robert Wolfe, Eric Vermote, Wayne Esaias, Ken Anderson, Steve Kempler, with Rebecca Lindsey taking the minutes.

1.0 Upcoming meetings

- MODIS Data Processing Review Meeting December 11-13, 2001
  NASA-GSFC
- AGU Meeting December 10-14, 2001
  San Francisco, CA
- MODIS Science Team Meeting December 17-19, 2001
  BWI Marriot

2.0 Meeting Minutes

2.1 General discussion

Esaias reported that we have a roll maneuver coming up and an inclination burn series. Esaias said they are going to keep the crossing time at 10:30 ±5 minutes. The first of 6 inclination burns is scheduled for 12/12/01, roughly once per month. In addition, Phil Sabelhaus/GSFC-Projects Directorate is working with Mike Luther/HQ-Code Y to get the deep space maneuver approved, and it looks like it will probably go.

Salomonson said that the updated Terra data product maturity definitions are approved and now will be implemented. He asked Lindsey to get them posted to the MODIS web site. [Note added in proof: New definitions have been posted to the MODIS web site.]

The group discussed the agenda for the MODIS Data Processing Review Team Meeting. Salomonson suggested having the discipline summaries first, then Dolly Perkins, then presentations by the DAACs, and finally the Tiger Team report. Moshe Pniel, meeting chair, wants only Science Team, Tiger Team or the Review Team members to be able to ask questions and to interact during the Review. Wolfe commented that they are discussing how best to present details of the Tiger Team report.

Conboy reported that a few people have expressed interest in putting up posters at the MST meeting. There will be space to hang the posters.

Salomonson reported that it is still undecided how much time MODIS will get at the Terra data products review at HQ in January.

2.2 Data update

Kempler reported that the DAAC was three days behind leading edge. They have new software that will let them take data right out of the cache when they are near the leading edge. They have about 18 days left from August/September and about 40 from January and February. Downtime is about 10%, but is improving. Average X-rate is 3.42 for November. He reported that the PIP group asked them to put a priority on reprocessing data from SAFARI in time for Science Team Meeting.

Wolfe reported that MODAPS was about 6-7 days behind real time. Some file corruption occurred that showed up in geolocation and some downstream products. This is a hardware problem that was quickly fixed, and they are investigating the data to see what the damage was and which products are affected. They think it will probably show up in the L3 binned products. They don't anticipate this slowing forward processing. Vermote commented that we would have to update the QA at DAAC to say that the period is suspicious. They will have to investigate how to update the QA at the DAACs.

Wolfe reported that export is fine, that EDC is ingesting about 800 GB a day, and has worked off most of its backlog. MODAPS is midway through August. They still need the first 15 days of September, and then they will jump to January. They hope to have a 16-day period from SAFARI done by the MST meeting.

2.3 instrument Update
Anderson reported that the A-side formatter and processor cards are done. They removed B-side cards, and they should be done by mid-December and back in the instrument. These changes should eliminate the resets. There will be a meeting with the IIRT external review team next week. This review will focus on the remaining test plans for Aqua. Aqua is also performing a Mission Test this week, which demonstrates operating the spacecraft and MODIS from here at GSFC. The Aqua Project is still working to a March 24 launch date.

2.4 EOSDIS Update
Reber asked about the issue of the DAAC and MODAPS interface and problems with PANS. He asked about the problems at an ESDIS meeting and their perception is that the process in place for resolving these difficulties is working. He wondered if the Technical Team agreed. Wolfe said that they have done a workaround reconciliation, and they got very good results. The number of problems at EDC is down, and GES DAAC is low, and NSIDC is about 0. But, they have separated reconciliation process from fixing the SIPS interface problem, i.e. the fact that they can run a reconciliation to find problems doesn't mean the problems are fixed. There was some discussion of using EDGARS to do the counting. A second set of meetings is planned to discuss the issue of fixing the "leaky pipes." MODAPS needs to be able to resend data when there are errors. The DAACS have been handling that on their end, but that is a lot of work for them.

Wolfe added that another important issue is resolving the trouble ticket at the DAAC over the issue of MODAPS not getting 1-8 missing granules per day on a recurring basis. Currently, people have to watch for those and reorder. As we ramp up and go to higher volume, the failures will require more resources to address, more people.

With respect to making consistent the product availability tables and the DAAC metadata that gives the products' QA status, it appears that there is currently no good way to do that on a per granule basis. Reber reported that a bulk metadata update tool would be available in February 2002. Wolfe reported that the data processing community has some concern about using the science quality flag for product quality. Another suggestion is changing the data model to incorporate a product maturity flag. Esaias commented that the science data quality was a field that was designed to be set retrospectively. So using that quality flag isn't the best place to set the maturity definitions. In the meantime, Reber indicated that they would update their web page indicating maturity level based on science team input.

2.5 Oceans Update

Salomonson asked Esaias about being able to say with confidence to others who are interested that the oceans products are good. Esaias said that they couldn't say that the visible time series is not very useful for seasonal variability studies about current data, but that December 2000 is very good. SST looks very promising for the full complete year at this point. They are having a session at an ocean sciences meeting in Honolulu that will try to answer concerns of the community as to progress. Esaias felt that the sun-earth distance correction must be in place before they can declare it validated.

Esaias showed some view graphs addressing the issue of the duplicative correction for earth sun distance. They detected this trend in the first 3 months of Collection 3 data, starting in Feb 2001. They saw a 50% change in normalized water leaving radiance as compared to MOBY in situ data. The ocean code developers had thought they needed to do the correction (apparently some other disciplines also) but MCST was doing it too. One impact is that there is no spring bloom in the MODIS chlorophyll..

When MCST and Oceans team made the corrections for Collection 3 correction, they were working with a small amount of data. When Miami ran MOBY granules without the sun-earth distance anomaly, they discovered that their previous corrections for mirror side and detectors, and band/band were no longer valid. The large anomaly was masking smaller anomalies. They believe there are three distinct major epochs in the Ocean data that will need to be corrected, with indications of some changes within those epochs. When they renormalize the other epochs with respect to MOBY, things look good, a total variance of 20% and expect this to decrease further. If they get the calibration right, they may be able to use all data from the entire mission.

What is disturbing, however, is that what they previously thought was noise is now a recognizable bias. There are cross-swath dependencies that are really problematic. He showed some slides that summarized how they plan to work out these new issues and a tentative timeline. He thinks that they could have all corrections in place by March 2002. The question then becomes how fast the data can be reprocessed. Miami may have 3-5x capacity in March, and one solution is to have them do the reprocessing and deliver to the DAAC on DLT.

Salomonson asked if land is affected to the same degree by the incorrect sun-earth distance problem. Vermote said no.

Reber asked if they could stop making ocean color until the corrections are in. Esaias said that they want to have something being processed to make sure the instrument is behaving. Also the SST data are till good, and they use ocean color for cloud correction. Plus it would require modifying code to stop ocean color, which diverts resources from the major problem.

Vermote said that Land would like to see how oceans compensates for these trends, to see if land would need to do something similar.

3.0 Action Items

3.1 Justice to contact Bob Whacker.
3.2 Ramsay to forward Justice an email from him.
3.3 Discipline leads to meet to resolve the issue of beta-release code and science-quality code, and what we need to say about it.
    Status: Open.
3.4 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.
    Status: Open.